

FINGERPRINT VERIFICATION

Fingerprint verification matching a claimant fingerprint with one of a number of recorded enrollee fingerprints uses various adaptations of model alignment techniques involving affine transformation to provide an algorithm providing relatively fast and accurate verification suitable for realtime applications. These techniques involve sampling minutiae into subsets based on geometrical proximity to a particular index minutiae for each subset, eliminating minutiae which are near the fingerprint boundary, ordering the minutiae of each subset in a predetermined manner, classifying each subset in bins which discriminate on the properties of the subsets, checking transformations proposed as matches between fingerprints for consistency with each other, and checking the topological as well as the geometrical correspondence of potentially matching fingerprints. In a preferred form, a score indicative of the correlation between fingerprints is used to ultimately decide whether the fingerprints match.

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